

Claims

1. A multilayer coating system comprising
 - at least one layer a) comprising a coating composition a) comprising at least one resin and an effective number of thiol groups, and
 - at least one layer b) comprising a coating composition b) comprising at least one resin and an effective number of thiol-reactive groups,at least one layer a) and at least one layer b) having at least one common layer boundary.
2. A coating system according to claim 1 wherein in composition a) the thiol groups are covalently attached to said at least one resin.
3. A coating system according to claim 1 wherein composition a) comprises at least one resin and a compound comprising said thiol groups.
4. A coating system according to claim 2 wherein composition a) comprises at least a second resin.
5. A coating system according to claim 1 wherein the thiol-reactive groups are selected from the group of isocyanate groups, epoxy groups, Michael acceptor groups, electron rich carbon-carbon double bond-containing groups, acetal groups, carboxyl groups, ester groups, amide groups, cyclocarbonate groups, alkoxy silane groups, etherified amino groups, lactone groups, lactam groups, (cyclic) ketone groups, aldehyde groups, (cyclic) ketene acetal groups, carbodiimide groups, and thiol groups.
6. A coating system according to claim 5 wherein the thiol-reactive groups are isocyanate groups.
7. A coating system according to claim 1 wherein in composition b) the thiol-reactive groups are covalently attached to said at least one resin.

8. A coating system according to claim 1 wherein composition b) comprises at least one resin and a compound comprising thiol-reactive groups.
- 5 9. A coating system according to claim 7 wherein composition b) comprises at least a second resin.
- 10 10. A coating system according to claim 1 wherein composition b) is a 2-component composition and comprises a component (i) which comprises thiol-reactive groups and a second component (ii) comprising groups which are reactive with thiol-reactive groups.
- 15 11. A coating system according to claim 1 wherein composition a) and/or composition b) in addition comprises at least one catalyst for the reaction between thiol-reactive groups and thiol groups.
12. A coating system according to claim 11 wherein said catalyst is a basic neutralizing agent.
- 20 13. A coating system according to claim 11 wherein the catalyst is a latent catalyst.
- 25 14. A coating system according to claim 13 wherein the latent catalyst is a photo-activatable catalyst.
- 30 15. A coating system according to claim 1 wherein coating composition a) comprises a curing agent comprising thiol-reactive groups and wherein the molar ratio of these thiol-reactive groups and thiol groups present in coating composition a) is below 0.5.

16. A coating system according to claim 1 wherein coating composition a) does not comprise a combination of a curing agent comprising thiol-reactive groups and a photo-activatable catalyst.
- 5 17. A coating system according to claim 1 wherein at least one of the coating compositions a) and/or b) is solvent borne.
18. A coating system according to claim 17 wherein coating composition a) is solvent borne and comprises a polyacrylate resin, a polyester resin, a
10 cellulose compound, and a thiol-functional compound.
19. A coating system according to claim 1 wherein at least one of the coating compositions a) and/or b) is water borne.
- 15 20. A coating system according to claim 19 wherein coating composition a) is water borne and comprises a thiol-functional polyurethane resin and a polyacrylate dispersion.
21. A coating system according to claim 1 wherein the coating system is a base
20 coat/clear coat system.
22. A method for finishing or refinishing an automobile or large transportation vehicle, comprising applying a coating system according to claim 1.
- 25 23. An aqueous coating composition comprising a thiol-containing polyurethane and a polyacrylate dispersion.